

Annual Report 2001



Greater Cincinnati Water Works
A service of the City of Cincinnati



Neighborhoods We Serve:

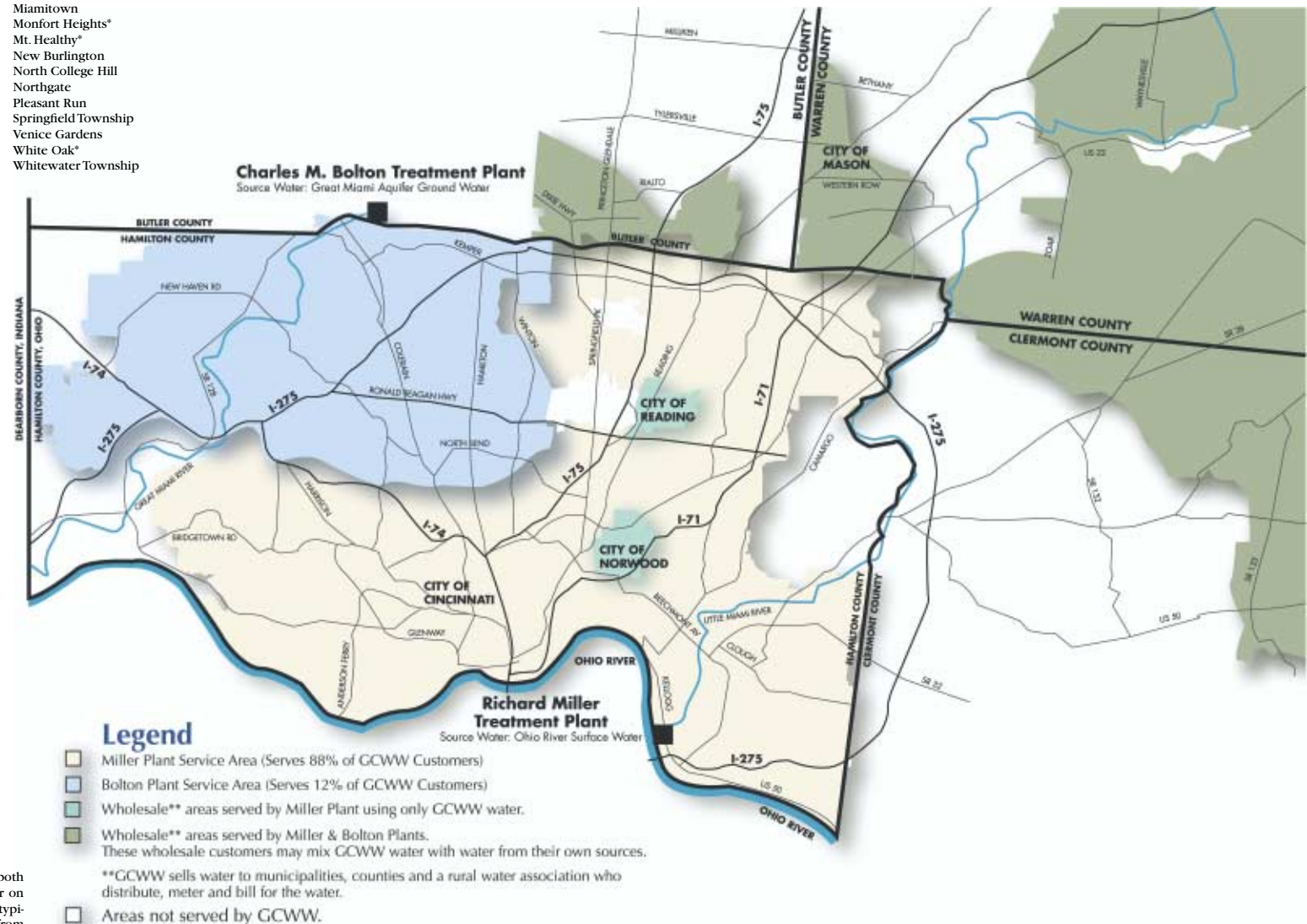
Miller Plant

Amberley Village
Anderson Township
Avondale
Blue Ash*
Bond Hill
California
Cherry Grove
Cheviot*
Clifton
Corryville
Covedale
Cumminsville
Deer Park
Delhi & Delhi Twp.
Downtown
East End
Elmwood Place
Evanston
Evendale
Fairfax
Golf Manor
Green Township*
Greenhills*
Hyde Park
Kennedy Heights
Kenwood
Lincoln Heights
Mack*
Madeira
Madisonville
Maricmont
Mason*
Miami Heights*
Montgomery
Mt. Airy*
Mt. Auburn
Mt. Lookout
Mt. Washington
Newtown
Northside
Norwood
Oakley
Pleasant Ridge
Price Hill
Reading
Roselawn
St. Bernard
Saylor Park
Sharonville*
Silverton
Springdale*
Sycamore Township*
Symmes Township
Walnut Hills
West End
Western Hills*
Westwood*
Winton Place
Woodlawn

Bolton Plant

Colerain Township
College Hill*
Crosby Township
Dent*
Forest Park*
Miamitown
Monfort Heights*
Mt. Healthy*
New Burlington
North College Hill
Northgate
Pleasant Run
Springfield Township
Venice Gardens
White Oak*
Whitewater Township

GCWW's Service Area



*These communities may get water from both the Miller and Bolton Plants. The border on the map is the dividing line under most typical operating conditions, although water from either plant may go miles beyond this border.

Greater Cincinnati Water Works

A service of the City of Cincinnati

David E. Rager, Director

Senior Management

William Knecht, Business Services Division

Connie Roesch, Commercial Services Division

Ann deGroot, retired July 2001

Frederick G. Merz, P.E., Distribution Division

Paul E. Tomes, P.E., Engineering Division

Albin J. Brune, P.E., Supply Division

William F. Reeves, P.E., retired April 2001

Jack DeMarco, Water Quality and Treatment Division

City Council Members

Charlie Luken, Mayor

Minette Cooper, Vice Mayor*

Alicia Reece, Vice Mayor*



Paul M. Booth

Minette Cooper

John Cranley

David Crowley**

Pat DeWine

Phil Heimlich**

Chris Monzel

David Pepper**

Alicia Reece

James R. Tarbell

*During 2001, Alicia Reece replaced Minette Cooper as Vice Mayor.

** During 2001, David Crowley and David Pepper were elected to Council.
Phil Heimlich left Council.

City Manager

John F. Shirey

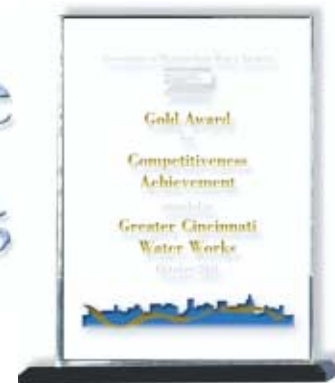
*City of Cincinnati is an Equal
Opportunity/Affirmative Action Employer*



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Great People Achieve Greater Cincinnati Water Works Great Things



Our Vision

Greater Cincinnati Water Works will be
the standard for excellence
in the water utility industry.

Our Mission

To provide our customers with a plentiful supply
of the highest quality water and outstanding
services in a financially responsible manner.

Since 1839, Greater Cincinnati Water Works (GCWW) professionals have worked hard to provide the very best in water treatment. Ranking among the top utilities in the water industry, our employees are recognized around the world for their accomplishments, integrity and professionalism.

In 2001, the Association of Metropolitan Water Agencies (AMWA) recognized GCWW as one of 24 water agencies that are setting the pace for utilities nationally. GCWW received the Gold Award for exceptional practices in the areas of competitiveness, finance, engineering and employee development.

In addition, GCWW received an AA+ rating from Standard and Poor's and an Aa2 rating from Moody's Investors Service for Water System Revenue Bonds issued in 2001. We are proud of these ratings which reflect "the economic strength and diversity of the utility's service area, growth in wholesale customers and a strong financial position."

Operating Water Works effectively calls for long-term planning. To ensure that GCWW continues to set the pace for the future we updated our Strategic Business Plan in 2001. Our plan provides a framework for managing change while staying focused on major goals.

GCWW's caring, knowledgeable professionals build relationships with the communities they serve. We ensure the highest quality water by maintaining strict security, and conducting continuous water quality testing and monitoring. We work constantly to maintain the public trust.

Reaching Out



In fulfilling our agreement to provide water to the communities of Northern Kentucky, the greatest obstacle we faced was not political or regulatory, but natural: the Ohio River. With 3,000 feet of 36-inch pipe to install across a heavily used river that runs over a boulder-packed glacial plane and with a four-year design and construction deadline, our professionals had their work cut out for them. (See page 9 for more details of the project.)

To our north, the city of Mason accepted a long-term proposal for Greater Cincinnati WaterWorks to provide retail water service, including the full operation and maintenance responsibilities of its water system.



In Fairfield, our Bolton Treatment Facility saw the 10th anniversary of the wellhead protection program. GCWW is a member of the Hamilton to New Baltimore Groundwater Consortium, created to protect the Great Miami Aquifer. GCWW's Bolton Plant treats water from the aquifer for customers in northwestern Hamilton County and parts of Butler and Warren Counties.



At the American Water Works Association (AWWA) annual conference in Washington D.C., members of the Consortium (photo, left) were presented the Exemplary Wellhead Protection Award, recognizing the Consortium for developing and implementing an outstanding well head protection program. The consortium also received the Lightspan Study Web Academic Excellence Award for their website. This award is given for website educational excellence.

We're Open Late... By Telephone

Great Customer Service is Our Hallmark

Taking good care of our customers begins with providing a plentiful supply of the highest quality water followed by dependable meter reading, accurate and timely billing, prompt and reliable on-site service, and courteous and knowledgeable responses to inquiries. Self-evaluation has led to changes in the way we handle customer calls. Customers are directed to GCWW's new Interactive Voice Response system where answers to frequently asked questions may be found without the aid of a customer service representative. Also, GCWW's new on-line procedures manual helps customer service representatives answer calls previously routed throughout the department.

Our new Interactive Voice Response (IVR) telephone system allows customers to access their account information around the clock. Credit cards may also be used to pay account balances 24 hours a day. During this first year of implementing IVR, 20,000 payment transactions were processed, valued at over 2.7 million dollars. The AutoDialer, another new feature, automatically updates billing information each month and places courtesy calls as needed to remind customers of their account status.

Holding Patterns are for Airlines, Not Utilities

Customer Relations Representatives answered 415,570 telephone inquiries during this past year. Although this represents a substantial increase over last year's calls, professionals were able to answer questions faster and reduce the time a customer is on hold to an average of 20 seconds.



Caring Professionals



Knowledgeable Consumers are

Our Best Friends

The Consumer Confidence Report (CCR), published annually and mailed to customers with their bills, raises consumer awareness and educates consumers about source water, water treatment and finished water quality. The public also gets information about drinking water through the news media and presentations to schools, civic and teacher groups. At our H₂O to Go booth at special events, we talk with customers in a casual setting while giving out free cups of water.

To help teachers in their efforts to teach students about the water cycle, Water Works provides teacher workshops and free resources in a variety of ways. Teachers can learn more about the programs offered through an annual mailing or by visiting the Greater Cincinnati Water Works' website at www.rcc.org/cww.

We listened, as more than 400 customers spoke to our water quality experts about their water quality concerns and questions this year. The most common comment was what we term "a general concern." This is when the customer inquires about the safety of the water even though the water has no unusual taste, odor or appearance. This year marks the first year "general concern" was the most common concern and reflects a more educated consumer.

Customers Change...So Do We!

To help ensure accurate, dependable meter reading, we have installed more touch pad meters and more electronic reading equipment. These efforts have increased GCWW's actual readings and reduced estimated bills. The increase in two-income families, along with concerns over pets, safety and privacy, have prompted us to install more of these remote reading devices.

Greater Cincinnati Water Works is often recognized for the outstanding accomplishments of the organization and the professionals who are the organization. Their dedication to provide safe water to our region goes hand-in-hand with their community service activities.

Jammin' on Main • Taste of Cincinnati • Ault Park July 4th Celebration

Ujima Cinci-Bration • AIDS Walk • Octoberfest • Riverfest

Mill Creek Restoration • Making Strides Against Breast Cancer Walkathon

Encouraging Results



From New Technology

Preliminary results are encouraging for GCWW's ultraviolet (UV) feasibility studies for inactivating Cryptosporidium and other pathogens. We expect that ultraviolet disinfection could provide one more way to meet customer expectations and future regulations. We have recorded no detections of Cryptosporidium in 11 years in our drinking water, although it is commonly found in untreated surface water.

Miller and Bolton Plants continue to produce high-quality water. In order to ensure continued compliance with Ohio Environmental Protection Agency (OEPA) regulations, OEPA performs a detailed annual survey that touches on all aspects of public drinking water systems. GCWW regularly receives outstanding ratings on these annual inspections. The survey helps us evaluate our ability to provide enough safe and clean drinking water and provides a close view of what is happening throughout the system and source water. Water Works plays an active role in the development of the government regulations affecting water treatment and continually participates in new studies to improve safety and quality of our product.





GREATER CINCINNATI WATER WORKS TUNNELING UNDER THE OHIO RIVER

GCWW will first drill the 3,000 foot long tunnel from Ohio to Kentucky. Drilling rods are attached to the pre-welded and pre-assembled supply pipeline. The pipe, supported on rollers every 40 feet, is pulled back through the tunnel. The abrasion overcoat acts as a sacrificial protective coating for the pipeline during installation.

SUPPLY LINE DETAILS

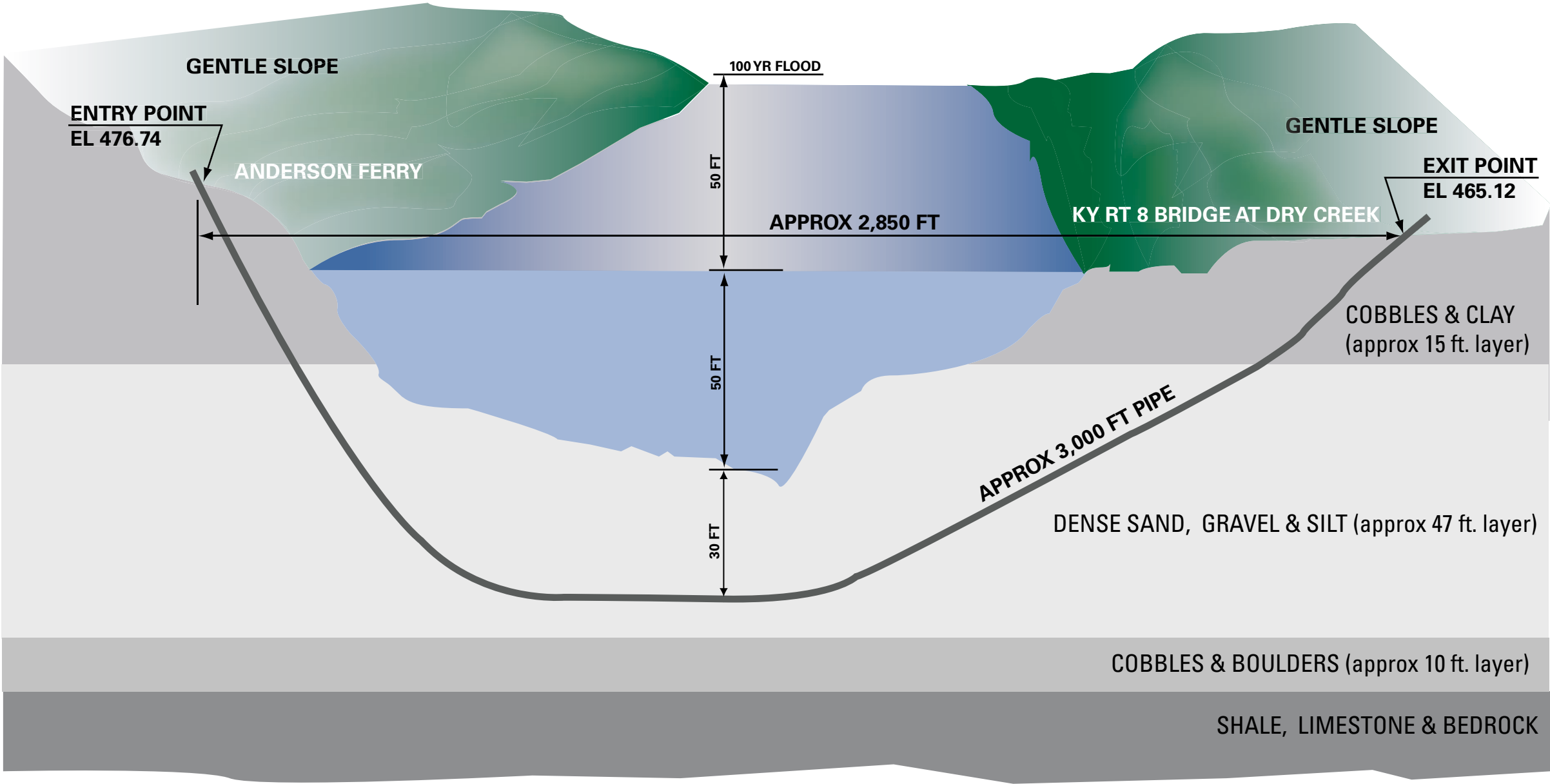
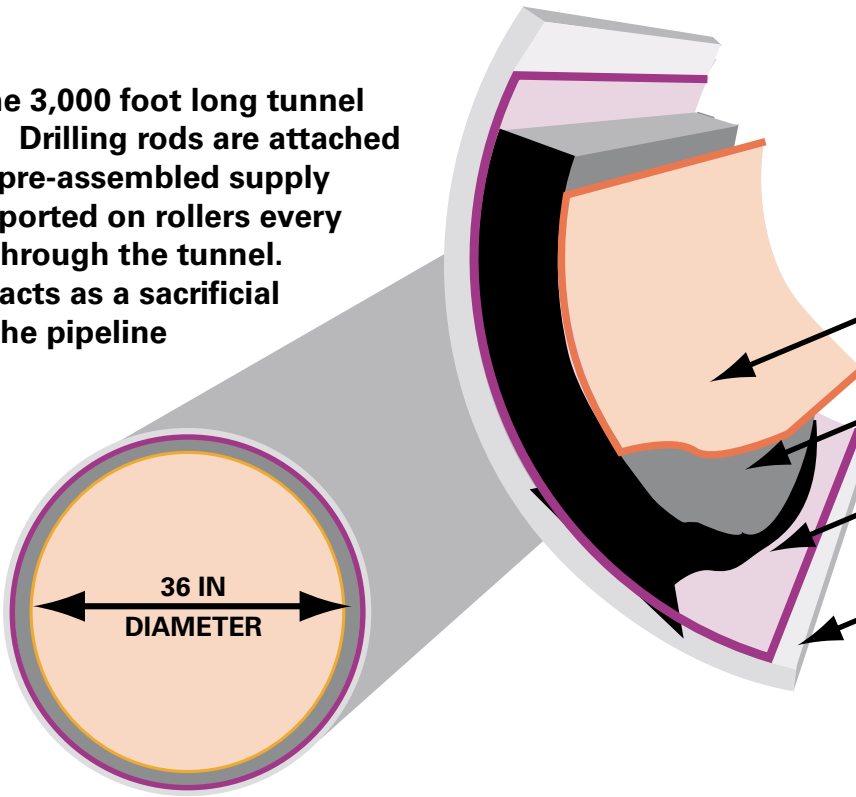
Not to scale: All Dimensions for Illustrative purposes only

16 MIL LIQUID EPOXY LINING (INTERIOR LINING)

3/4 IN WELDED STEEL PIPE (Approx. 3,000 FT LONG)

16 MIL FUSION BONDED EPOXY COATING (EXTERIOR)

50 MIL ABRASION OVERCOAT (POWERCRETE)



3000 ft. Long



Welding



Connecting



Placement

Plentiful, Clean, Safe



Water



Minimizing Cost & Improving Efficiency

Several projects are examples of activities leading to cost savings and performance improvements. Remote operation of the Bolton Plant and filter backwash automation at the Miller Plant were significant improvements. In addition, we evaluated our carbon regeneration process, and developed a new operational plan which should result in significant cost savings. Filter Demonstration Study results were submitted to OEPA and we are awaiting formal approval to increase sand filtration rates. This study and other work done to re-rate the Miller Plant have the potential for saving 90 to 180 million dollars in capital outlay.

Enhancing Quality

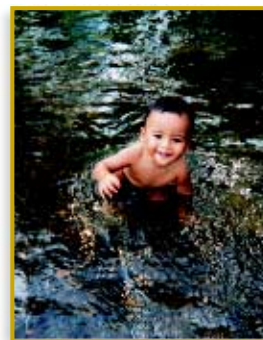
As part of our overall strategy, we continue to develop and evaluate new methods to reduce lead levels in the distribution system. Even though the lead and copper levels in our distribution system are below regulatory limits, we look for any opportunity for improvement. Raising the pH of the water was very effective in reducing lead levels in recent tests. We continue to be involved with the U.S. Environmental Protection Agency (USEPA) and other organizations public and private to provide solutions and achieve scientifically sound, cost-effective regulations.

“River Bank Filtration”, new buzz words in the water supply industry, applies to the use of natural deposits of sand and gravel next to rivers and streams to remove contaminants from surface water. GCWW’s flowpath study, conducted from 1999 through 2001, is currently being looked at as an informative and important source of data. The primary purpose of the study is to assess the natural filtration process as the water moves from the river to the production well. The study demonstrated that riverbank filtration is very effective.

Measuring Results

Pilot Study Leads to Cleaner Pipes

A recent American Water Works Association Research Foundation (AWWARF) project entitled “Investigation of Pipe Cleaning Methods” recognized the GCWW Flushing Program as innovative in introducing a scientific approach to measuring results and calls the GCWW program the “model for how others can measure results”. We have demonstrated that significant, measurable, long-term improvements in water quality can be achieved with high velocity unidirectional flushing through fire hydrants. Rusty water complaints have decreased markedly in areas where the flushing program has been implemented. The GCWW Flushing Program began as a 1995 Strategic Business Plan Strategy, and based on its success, the program will be expanding into additional neighborhoods served by Water Works.





Working Around The Clock

Water main replacement and rehabilitation is crucial. It is driven by water main breaks, street improvements, fire flow, system pressures and related costs. Water system models help GCWW professionals identify and prioritize rehabilitation projects. Thanks to a computer database of underground reports from 1984 until present, we can now study trends. We coordinate Capital Improvements Projects (CIP) and work with other agencies in a combined effort to replace water mains during planned street improvements to reduce inconvenience.

Capital Improvements...

Serving You Better!



Upgrades to the distribution system are in progress and we are sharpening our skills in information technology (IT). As part of our IT program, the Countywide Enterprise Permits System (CEPS) became a reality in the planning offices with ties to the rest of the Water Works slated for 2002. Plans were reviewed and completed for 61 projects during the year. The water main work associated with these projects was estimated to cost \$26,700,000 and involved the installation of 30.4 miles of main. Of this pipe, 21.7 miles were replacement mains and 8.7 miles were new mains added to the system. Water Works now has 2,832 miles of water mains carrying water to the Greater Cincinnati consumers we serve.

Planning Ahead, Taking the Lead



In order to assist our professionals, Greater Cincinnati Water Works implemented a computerized work order/inventory system on October 1st. This system helps us schedule work and assists with time keeping and planning for large jobs. It connects all of GCWW's operations and documents distribution system work. This system is expected to assist us in making decisions on future system and equipment replacement.

Another computerized system is GIS or Geographical Information System. By year's end, more than 2800 miles of pipe were part of the digital GIS database with only about 30 miles to go. By March, all existing water main system records were fully converted to the digital format essentially eliminating all paper records. During the year, more records requests were being handled via emails, significantly reducing the number of paper prints and improving customer service. Greater Cincinnati Water Works now offers a one-stop-shop for contractors to obtain information, permits and other building requirements.

GCWW professionals attend classes and seminars to stay abreast of the latest information in their respective fields. They also attend more generalized programs in safety and security. In keeping with department goals, all employees attended OSHA-required courses pertinent to their assignments. Water Works professionals also attended courses on the new work order system, target zero safety leadership for the year 2002, and a variety of professional development classes and seminars.

New Perspectives!

Workshops are Valuable for Education

Greater Cincinnati Water Works is one of sixty utilities invited to attend and participate in regional opportunities workshops. These workshops, organized by GCWW, provide an opportunity for the utilities in the area to meet and discuss common concerns and issues. Two workshops were held this year. They provided information on the following topics: emergency responses by water utilities; communication with the media during an emergency; State Operator Certification Program for Ohio, Kentucky, and Indiana; GCWW Ohio River crossing project and tour of construction site; Safe Drinking Water Act updates; and utility system security.

A Sense of Balance

Managing the balance of daily activities with safety and the implementation of new technology in our operations has been a tremendous challenge. Our professionals know their jobs well, excel daily in their work and continue to provide the highest quality water to the communities we serve. We will continue to build on our relationships to better serve the people of Greater Cincinnati.

General Operational Data



Miller Plant

Bolton Plant

Raw Water Pumped

41,816,248,000 Gallons

5,786,254,000 Gallons

Finished Water Delivered for Consumption

41,489,185,000 Gallons

5,557,820,000 Gallons

Filtered Water Used in Washing Filters

562,363,000 Gallons

31,694,000 Gallons

Percent Used - Average

1.4%

0.6%

Percent Used - Maximum Month

(April) 2.0%

(April) 0.7%

Percent Used - Minimum Month

(February & March) 1.0%

(February) 0.0%

Total Number of Filter Washes

5,040

218

Maximum Month

(April) 597

(January & August) 21

Minimum Month

(February) 258

(February) 13

Period of Filter Service, Average Hours

Maximum Month

(March) 55.0 Hours

Minimum Month

(November) 31.0 Hours

Average per Filter Run

42.0 Hours

177.0 Hours

Rate of Filtration

Maximum - Million Gallons per Day

(May 5) 149,601,000 MGD

(August 8) 21,940,000 MGD

Minimum - Million Gallons per Day

(December 25) 90,257,000 MGD

(June 3) 13,395,000 MGD

Finished Water Delivered for Consumption

41,489,185,000 Gallons

5,557,820,000 Gallons

Average Day

113,668,997 Gallons

15,226,901 Gallons

Maximum Month

(August) 4,029,242,000 Gallons

(August) 496,271,000 Gallons

Average Day/Maximum Month

129,975,548 Gallons

16,008,742 Gallons

Minimum Month

(February) 2,967,607,000 Gallons

(February) 412,060,000 Gallons

Average Day/Minimum Month

105,985,964 Gallons

14,716,428 Gallons

In 2001, GCWW achieved an average daily distribution of 128,896 million gallons of water per day, compared to 133,191 million gallons per day in 2000.



Microbiological Data

	Coliform Bacteria per 100 Milliliters	Giardia Cysts per 100 Liters	Cryptosporidium Oocysts per 100 Liters
Finished Water			
% Positive Samples	0%	0%	0%
Miller Finished Water	Less than 1 detected	none detected	none detected
Bolton Finished Water	Less than 1 detected	none detected	none detected
Distribution System	Less than 1 detected	N/A	N/A
Miller Raw Water - Detections			
% Positive Samples	100%	0%	0%
Average	1,400	-	-
Maximum Monthly Average	3,800	-	-
Maximum Day	7,900	-	-
Minimum Monthly Average	160	-	-
Minimum Day	12	-	-
Bolton Raw Water - Detections			
% Positive Samples	0%	0%	0%
Average	-	-	-
Maximum Monthly Average	-	-	-
Maximum Day	-	-	-
Minimum Monthly Average	-	-	-
Minimum Day	-	-	-
	A total of 3,392 samples were analyzed	A total of 25 samples were analyzed	A total of 25 samples were analyzed

Regulated Contaminants:

Substances subject to a Maximum Contaminant Level (MCL), Action Level (AL) or Treatment Technique (TT)*. These standards protect drinking water by limiting the amount of certain substances that can adversely affect public health and are known or anticipated to occur in public water systems.

				Miller Water		Bolton Water	
Substance	Unit	Maximum Allowed (MCL, AL, TT)*	MCLG*	Highest Level Detected	Range of Detections	Highest Level Detected	Range of Detections
Fluoride	ppm	4	4	1.09	0.82 - 1.09	1.10	0.88 - 1.10
Nitrate	ppm	10	10	1.86	0.78 - 1.86	2.70	1.03 - 2.70
Total Trihalomethanes	ppb	100	0	30.2	19.3 - 50.6	33.4	24.2 - 43.9
Gross Beta	pCi/L	50	0	nd	nd	4.4 ^a	4.4 ^a
Turbidity	NTU	TT 1 < 5 ^b TT 2 > 95% ^b	na na	0.11 100%	0.05 - 0.11	0.09 100%	0.03 - 0.09
Lead	ppb	15	0	90th percentile 7.1	nd - 68.8 4 out of 105 samples tested were > the AL	90th percentile 5.3	nd - 17.5 1 out of 72 samples tested were > the AL
Copper	ppm	1.3	1.3	90th percentile 0.0193	nd - 0.0746 0 out of 105 samples tested were > the AL	90th percentile 0.0279	nd - 0.0485 0 out of 72 samples tested were > the AL

Unregulated Contaminants:

Substances for which EPA requires monitoring to determine where certain substances occur and whether it needs to regulate those substances.

			Miller Water		Bolton Water		Typical Source of Contamination
Substance	Unit	MCLG*	Average Level Detected	Range of Detections	Average Level Detected	Range of Detections	<p>Substances in this table are byproducts of drinking water disinfection. Disinfection of drinking water is a major public health advance of the 20th century. One hundred years ago, typhoid and cholera epidemics were common in American cities.</p> <p>Disinfection was a major factor in reducing these epidemics. GCWW uses chlorine as a disinfectant to kill harmful microorganisms such as bacteria and viruses.</p> <p>Disinfectants can react with naturally occurring materials in water to form substances which may pose health risks. These substances are called "disinfection byproducts (DBPs)". The disinfection byproducts found in Cincinnati water for which EPA requires monitoring are listed here.</p> <p>Disinfectant</p>
Chloroform	ppb	0	0.8	0.8	2.4 ^a	2.4 ^a	
Bromodichloromethane	ppb	0	1.8	1.8	5.1 ^a	5.1 ^a	
Dibromochloromethane	ppb	60	1.8	1.8	8.1 ^a	8.1 ^a	
Bromoform	ppb	0	0.7	0.7	7.2 ^a	7.2 ^a	
Haloacetic Acids (HAA6)	ppb	nr	10.6 ^a	3.58 - 12.60 ^a	11.29 ^a	4.83 - 16.60 ^a	
1,1 - Dichloropropanone	ppb	nr	nd ^a	nd - 1.98 ^a	nd ^a	nd - 2.04 ^a	
1,1,1 - Trichloropropanone	ppb	nr	nd ^a	nd - 1.70 ^a	nd ^a	nd - 1.69 ^a	
Trichloroacetonitrile	ppb	nr	nd ^a	nd - 1.28 ^a	nd ^a	nd - 1.25 ^a	
Dichloroacetonitrile	ppb	nr	0.62 ^a	nd - 2.09 ^a	1.62 ^a	nd - 2.12 ^a	
Bromochloroacetonitrile	ppb	nr	0.71 ^a	nd - 2.40 ^a	1.35 ^a	0.51 - 2.55 ^a	
Dibromoacetonitrile	ppb	nr	1.41 ^a	nd - 3.70 ^a	3.84 ^a	1.80 - 4.83 ^a	
Chloral Hydrate	ppb	nr	0.58 ^a	nd - 1.97 ^a	nd ^a	nd - 0.69 ^a	
Total Organic Halide	ppb	nr	nd ^a	nd ^a	nd ^a	nd - 73.1 ^a	
Free Chlorine Residual	ppm	nr	0.89 ^a	0.60 - 1.27 ^a	0.92 ^a	0.55 - 1.20 ^a	Disinfectant

^aSample analysis was not required in 2001. Most recent data shown.

^bThe EPA has two requirements: 1) That the maximum level found must be less than 5 NTU; and 2) That the level must be under 0.5 NTU 95% of the time. GCWW met both requirements.

Typical Source of Contamination

Additive which promotes strong teeth. May come from erosion of natural deposits
Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
Byproduct of drinking water chlorination
Decay of natural and man-made deposits
Soil runoff

May come from erosion of natural deposits. There is no detectable lead in our water as it leaves the treatment plants. However, corrosion of household plumbing is a source of contamination. GCWW tests water samples collected at customer taps, as required by the Safe Drinking Water Act to ensure safe water.

Water Quality Data Table

The tables (left) show the substances reported in the GCWW 2001 Safe Drinking Water Report, which was prepared to meet the EPA's National Primary Drinking Water Regulation for Consumer Confidence Reports.

All of the regulated substances were well within the limits the EPA has set to ensure the safety of tap water. For more information on the potential health effects of various substances, call the EPA's Safe Drinking Water Hotline at 1(800) 426-4791. Check the EPA's website at www.epa.gov/safewater/hfacts.html for more detailed descriptions of contaminants.

Customers may request additional printed copies of the report or view the entire GCWW Safe Drinking Water Report on the internet at www.rcc.org/cww.

Abbreviations

ppb: parts per billion or micrograms per liter.

ppm: parts per million or milligrams per liter.

na: not applicable.

NTU: Nephelometric Turbidity Unit, used to measure clarity in drinking water.

nd: not detectable at testing limits

nr: not regulated

pCi/L: picoCuries per liter, a measure of radioactivity in water.



*Definitions

Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Action Level or AL: The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique or TT: A required process intended to reduce the level of a contaminant in drinking water.

Radon: Radon is a naturally occurring radioactive gas. While radon is currently unregulated, the USEPA has proposed that a maximum contaminant level (MCL) of 300 pCi/L be established to protect the public from exposure to radon. Radon was detected in Bolton water at a level of 200 pCi/L which is less than the level that will be allowed in drinking water under the proposed legislation.

THE FOLLOWING WERE BELOW THE DETECTION LIMIT IN OUR FINISHED WATER:¹

Inorganics: Antimony, Arsenic, Asbestos, Barium, Beryllium, Cadmium, Chromium, Cyanide, Mercury, Nickel, Nitrite, Selenium, Thallium, Aluminum, Iron, Manganese, Silver, Zinc

Pesticides and Other Synthetic Organic Compounds: Alachlor, Atrazine, Benzo[a]pyrene, Carbofuran, Chlordane(total), Dalapon, Dibromochloropropane, Di(2-ethylhexyl) adipate, Di(2-ethylhexyl) phthalate, 2,4-D, Dinoseb, Diquat, Endothall, Endrin, Ethylene dibromide, Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methoxychlor, Oxamyl (Vydate), Pentachlorophenol, Picloram, PCB's (total), Simazine, 2,3,7,8-TCDD (Dioxin), Toxaphene, 2,4,5-TP (Silvex), Aldicarb, Aldrin, Butachlor, Bromacil, Carbaryl, Dicamba, Dieldrin, 3-Hydroxycarbofuran, Methomyl, Metolachlor, Metribuzin, Propachlor

Volatile Organic Chemicals: Trichloroethene, Benzene, Carbon tetrachloride, 1,2-Dichloroethane, Vinyl Chloride, 1,1-Dichloroethene, 1,1,1-Trichloroethane, 1,4-Dichlorobenzene, cis-1,2-Dichloroethene, Tetrachloroethene, 1,2-Dichlorobenzene, trans-1,2-Dichloroethene, Chlorobenzene, Styrene, Toluene, Xylenes (total), 1,2-Dichloropropane, 1,1,2-Trichloroethane, Dichloromethane, Ethylbenzene, 1,2,4-Trichlorobenzene, 2,2-Dichloropropane, Dichlorodifluoromethane, Dibromomethane, 1,3-Dichloropropane, Chloromethane, Bromomethane, Bromochloromethane, 1,2,3-Trichloropropane, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, 1,1-Dichloropropene, Chloroethane, 1,3-Dichloropropene, Hexachlorobutadiene, Naphthalene, tert-Butylbenzene, 4-Isopropyltoluene, Trichlorofluoromethane, sec-Butylbenzene, 1,1-Dichloroethane, Bromobenzene, Isopropylbenzene, n-Propylbenzene, 2-Chlorotoluene, 4-Chlorotoluene, 1,3-Dichlorobenzene, 1,2,3-Trichlorobenzene, 1,2,4-Trimethylbenzene, n-Butylbenzene, 1,3,5-Trimethylbenzene

Radiological: Combined Radium (pCi/L), Alpha-Gross (pCi/L), Beta-Gross (pCi/L), Strontium-90 (pCi/L), Tritium (pCi/L)

¹Some analyses not required or performed in 2001, most recent results shown.



Raw & Finished Water

Comparisons of Selected Parameters

Raw Water

Finished Water

	Miller Plant		Bolton Plant		Miller Plant		Bolton Plant	
	Average	Range	Average	Range	Average	Range	Average	Range
Turbidity (NTU)	49	6.5-451	0.05	0.03-0.1	0.08	0.05-0.11	0.04	0.03-0.09
Total Alkalinity (as CaCO ₃)	68	51-85	220	118-240	74	48-102	73	58-197
Total Hardness (as CaCO ₃)	130	88-200	314	288-336	133	92-204	164	143-200
Calcium (as Ca)	36	25-46	91	28-122	38	28-69	42	25-62
Magnesium (as Mg)	9.4	6.1-13	19	6-31	9.6	5.1-14	15	2-25
pH (Units)	7.8	7.4-8.4	7.5	7.3-7.8	8.8	8.6-9.1	9.2	8.5-9.5
Chloride	32	19-45	72	57-88	34	16-49	71	58-84
Fluoride	0.17	0.1-0.31	0.3	0.19-0.37	0.97	0.82-1.09	1.00	0.88-1.10
Sulfate	80	57-119	72	63-83	78	58-119	68	59-82
Nitrate (as NO ₃ -N)	1.35	0.75-1.90	1.97	1.0-2.64	1.22	0.8-1.86	1.95	1.03-2.70
Iron (as total Fe)	0.4	0.4-0.4	<0.1	<0.1-<0.1	<0.1	<0.1-<0.1	<0.1	<0.1-<0.1
Manganese (as total Mn)	0.05	0.05-0.05	0.18	0.18-0.18	<0.01	<0.01-<0.01	<0.01	<0.01-<0.01
Sodium	27	16-46	41	38-44	32	21-50	42	40-44
Total Solids	42	4-244	N/A	N/A	257	179-333	N/A	N/A
Total Dissolved Solids	266	204-340	461	402-511	257	179-333	323	274-406
Total Organic Carbon	2.9	2.2-3.7	1.1	0.9-1.4	0.9	0.3-1.4	1.0	0.8-1.2
Phosphate (as PO ₄ -P)	-	-	-	-	N/A	N/A	0.11	0.04-0.15
Chlorine Residual, Free	-	-	-	-	1.09	0.88-1.31	1.06	0.85-1.29
Chlorine Residual, Total	-	-	-	-	1.15	0.95-1.39	1.13	0.95-1.37

In mg/l Except Where Noted

Chemical Costs



Miller Plant

	Tons	Cost (\$)
Aluminum Sulphate (Dry Basis)	2,319	220,142
Polymer (Liquid)	325	102,659
Ferric Sulphate	36	6,422
Lime	498	35,221
Caustic Soda	1,612	561,384
Chlorine	270	69,911
Activated Carbon		
(Powdered)	3	2,374
(GAC)	459	505,615
Fluosilicic Acid (Wet Basis)	672	84,026
Potassium Permanganate	-	-
Sodium Hexametaphosphate	-	-
Total	6,194	1,587,754

Bolton Plant

	Tons	Cost (\$)
	-	-
	-	-
	-	-
	3,153	221,969
	-	-
	41	10,694
	-	-
	-	-
	83	10,284
	-	-
	12	14,028
Total	3,289	256,975

Financial Profile

Comparative Balance Sheet, December 31, (000's omitted)

Assets:

Current Assets

	2001	2000
Equity in City Treasury Cash	\$ 52,508	\$ 44,314
Cash and Equivalents	981	0
Accounts Receivable	14,376	15,806
Allowance for Doubtful Accounts	(1,684)	(1,987)
Due from Other Funds	1,043	210
Accrued Interest Receivable	1,537	1,013
Inventory	4,767	4,826
Prepaid Expense	25	71
Total Current Assets	73,553	64,253

Restricted Assets

Cash and Equivalents	7,784	0
Equity in City Treasury Cash	56,628	15,706
Total Restricted Assets	64,412	15,706

Fixed Assets

Land	2,610	2,509
Buildings	141,512	135,555
(Accumulated Depreciation)	(44,790)	(41,748)
Improvements	249,566	228,496
(Accumulated Depreciation)	(44,322)	(41,882)
Machinery and Equipment	127,732	119,364
(Accumulated Depreciation)	(66,275)	(62,187)
Leased Assets	190	190
(Accumulated Amortization)	(139)	(92)
Construction in Progress	113,297	90,878
Total Fixed Assets	479,381	431,083

Other Assets

Due From Other Entities	10,403	11,702
Advance to Other Fund	375	411
Total Other Assets	10,778	12,113

Total Assets

\$628,124	\$523,155
------------------	------------------

The accompanying notes are an integral part of this financial statement.



Liabilities and Fund Equity:

	2001	2000
Current Liabilities Payable from Current Assets		
Accounts Payable	\$ 1,237	\$ 2,407
Vouchers Payable	37	62
Accrued Payroll	1,162	1,920
Estimated Liability for Unpaid Claims	68	73
Accrued Interest	383	456
Current Obligation Capital Lease	51	62
Due to Other Funds	358	797
Due to Other Governments	1,467	1,203
Total Current Liabilities Payable from Current Assets	4,763	6,980
Current Liabilities Payable from Restricted Assets		
Construction Contracts Payable	4,461	3,223
Deposit for Services	535	786
Total Current Liabilities Payable from Restricted Assets	4,996	4,009
Long Term Liabilities		
Estimated Liability Compensated Absences	4,887	5,010
Non Current Obligation Under Capital Lease	4	55
Premium On Bond Sale	2,469	0
Revenue Bonds Payable	92,685	0
General Obligation Bonds Payable	82,180	96,500
Total Long Term Liabilities	182,225	101,565
Contributed Capital		
Private Contributions	44,178	35,872
Total Contributed Capital	44,178	35,872
Retained Earnings		
Reserved for Restricted Assets	59,416	11,697
Unreserved	332,546	363,032
Total Retained Earnings	391,962	374,729
Total Liabilities and Fund Equity	\$628,124	\$523,155

The accompanying notes are an integral part of this financial statement.

Statement of Revenues, Expenses and Changes in Retained Earnings
For the Year Ended December 31, (000's omitted)

	2001	2000
Operating Revenue:		
Metered Water Revenue	\$ 73,784	\$ 76,151
Service Charges	943	847
Nonmetered Water Revenue	145	254
Servicing Customers Installations	4	3
Miscellaneous Revenue	1,916	1,861
Operating Interest Revenue	284	318
Rental Income	99	105
Departments of Sewers and Stormwater Management for Billing and Collection Services	4,364	4,039
Purchasing Agent Sales Revenue	3	8
Total Operating Revenue	81,542	83,586
Operating Expense:		
Personal Services	29,237	28,409
Contractual Services	7,491	7,688
Maintenance and Repair	2,836	3,207
Materials and Supplies	5,917	5,063
Utilities	6,802	6,532
Insurance	181	91
Taxes	16	20
Rent	306	328
Other	190	354
Depreciation and Amortization Expense	12,152	12,217
Bad Debt Expense	175	297
Total Operating Expense	65,303	64,206
Operating Income	16,239	19,380
Non-Operating Revenue (Expense):		
Gain (Loss) on Disposal of Fixed Assets	(516)	(176)
Interest Revenue	8,521	4,534
Interest Expense	(7,416)	(4,792)
Total Non-Operating Revenue (Expense)	589	(434)
Net Income	16,828	18,946
Contributed Capital Adjustment	405	358
Increase in Retained Earnings	17,233	19,304
Retained Earnings - January 1,	374,729	355,425
Retained Earnings - December 31,	\$391,962	\$374,729

The accompanying notes are an integral part of this financial statement.



Statement of Cash Flows, Direct Method For the Year Ending December 31, (000's omitted)

Cash Flow from Operating Activities:

Receipts from Customers	
Payments to Suppliers	
Payments to Employees	
Payments for Property Taxes	
Net Cash Provided (Used) by Operating Activities	

2001

\$ 82,962
(25,213)
(30,162)
(16)
27,571

2000

\$ 83,603
(25,800)
(28,318)
(21)
29,464

Cash Flow from Non Capital Financing Activities:

Repayments of Advances Made to Other Funds	
Net Cash Used by Non Capital Financing Activities	

36
36

35
35

Cash Flow from Capital and Related Financing Activities:

Capital Contributed by Other Sources	
Proceeds from the Sale of Fixed Assets	
Additions to Construction in Progress	
Acquisition of Property, Plant and Equipment	
Interest Paid on Bonds	
Proceeds from Sale of Bonds	
Principal Paid on Bonds	
Principal Paid on Long Term Capital Leases	
Net Cash Used by Capital and Related Financing Activities	

376
169
(22,419)
(29,144)
(7,489)
95,154
(14,320)
(50)
22,277

3,136
76
(21,756)
(14,764)
(4,861)
0
(14,440)
(62)
(52,671)

Cash Flow from Investing Activities:

Proceeds from Sale of Investments	
Interest and Dividends on Investments	
Net Cash Provided by Investing Activities	

0
7,997
7,997

10,047
4,288
14,335

Net Increase (Decrease) in Cash and Cash Equivalents

Cash and Cash Equivalents at Beginning of Year

57,881
60,020
117,901

(8,837)
68,857
60,020

Cash and Cash Equivalents at End of Year

Reconciliation of Operating Income to Net Cash Provided (Used) by Operating Activities

Operating Income	
Depreciation and Amortization	
Changes in Assets and Liabilities:	
(Increase) Decrease in:	
Receivables	
Due from Other Funds	
Due from Other Governments	
Prepaid Assets	
Inventory	
Increase (Decrease) in:	
Accounts Payable	
Accrued Payroll	
Deposits Payable	
Due to Other Entities	
Current Obligation Capital Lease	
Due to Other Governments	
Liability for Compensated Absences	
Estimated Liability for Unpaid Claims	
Net Cash Provided by Investing Activities	

16,239
12,152
1,127
(833)
1,299
46
59
(1,195)
(758)
(251)
(439)
(11)
264
(123)
(5)
\$ 27,571

19,379
12,217
2,165
(158)
(1,693)
114
(228)
(88)
185
(41)
(381)
5
(1,934)
(94)
16
\$ 29,464

Schedule of Noncash Investing, Capital and Financing Activities

Acquisition of Property, Plant and Equipment from Contributed Capital	
Total Noncash Investing, Capital and Financing Activities	

\$ 8,335
\$ 8,335

\$ 6,455
\$ 6,455

The accompanying notes are an integral part of this financial statement.

Notes to Financial Statements - December 31, 2001

Summary of Significant Accounting Policies

The Cincinnati Water Works is a municipally owned and operated utility. The financial statements of the Cincinnati Water Works are included in the Comprehensive Annual Financial Report of the City of Cincinnati. An annual audit of the financial statements of the City of Cincinnati is performed by or at the direction of the Auditor of State.

Deposits and Investments with Financial Institutions - Cash balances of the Cincinnati Water Works are included in a pool of City Treasury Cash. The City Treasurer determines the amounts to be kept on hand to meet current obligations and amounts and timing of investments. All deposits and investments by the City are insured by the Federal Deposit Insurance Corporation or some other instrumentality of the Federal government, or are covered by securities held by the City or its agent in the City's name.

Accrued Interest Receivable - Interest receivable on Water Works funds has been accrued and recognized as revenue for 2001 and 2000; the amounts are \$1,537,000 and \$1,013,000 respectively.

Inventories of Materials and Supplies - Inventories are valued at cost which are determined on the moving average basis.

Restricted Assets and Related Liabilities and Reserves - Assets the uses of which are restricted by City Council ordinance for improvements, extensions and construction of the system are segregated on the balance sheet.

Fixed Assets and Depreciation - Fixed Assets are stated at cost and are depreciated by the straight-line method over estimated useful lives up to 100 years. Typical lives are as follows:

Buildings	67 Years
Transmission and Distribution Mains	100 Years
Machinery and Equipment	3 to 30 Years

Capitalization of Interest - Interest is capitalized by the Cincinnati Water Works when it is determined to be material. The Water Works capitalizes interest in accordance with Statement of Financial Accounting Standard No. 62, Capitalization of Interest Costs in Situations Involving Certain Tax Exempt Borrowing and Certain Gifts and Grants. The statement requires that the interest cost capitalized during construction to be reduced by interest income earned on investments of the bond proceeds from the date of the borrowing until the assets constructed from the bond proceeds are ready for their intended use. The capitalized interest for December 31, 2001 was \$586,000 and for the year ending December 31, 2000 was \$612,000.

Leased Assets - One contract which provides for the lease purchase of copying machines was entered into during 1999. The term of this contract expires in 2003, required principal and interest payments are as follows:

	Principal	Interest
2002	50,600	2,100
2003	4,500	200

Compensated Absences - NCGA Statement 4 requires state and local governments to recognize the liabilities associated with employees' compensated absences. Therefore, the following obligations have been included in the Cincinnati Water Works Comparative Statement of Long-Term Liabilities:

Vacation - Vacation benefits are considered to be vested benefits of the employees. The obligation at December 31, 2001 for vacation benefits of Cincinnati Water Works employees is approximately \$2,439,000.

Sick Leave - Sick leave benefits are included in the estimated liability for the employees, based upon the portion of accumulated sick leave liability that is estimated to eventually be paid as a retirement or death benefit. At December 31, 2001 this liability is approximately \$2,384,000 for Water Works employees.

Compensatory Time - Employees are permitted to accumulate Compensatory Time for work in excess of their normal forty-hour week. The amount of the obligation at December 31, 2001 is \$65,000.



The following is a Summary of the Changes in the Estimated Liability for Compensated Absences of the Cincinnati Water Works for the year ended December 31, 2001 (000's omitted):



	Accrued Vacation	Accrued Sick Pay	Compensatory Time	Total
Estimated Liability for Compensated Absences January 1, 2001	\$2,606	\$2,336	\$67	\$5,009
Earned During 2001	1,456	143	48	1,647
Used/Forfeited During 2001	<u>(1,623)</u>	<u>(95)</u>	<u>(50)</u>	<u>(1,768)</u>
Estimated Liability for Compensated Absences December 31, 2001	\$2,439	\$2,384	\$65	\$4,888

Pension Plans - Full time employees of the Cincinnati Water Works participate in one of two pension plans - either the Retirement System of the City of Cincinnati, administered by the City of Cincinnati, or the Public Employee's Retirement System (PERS), administered by the State of Ohio. The Cincinnati Water Works contributions to the City administered retirement system during 2001 and 2000 were \$1,735,000 and \$1,631,000 respectively. Contributions to PERS during 2001 and 2000 were \$205,000 and \$118,000 respectively. The actuary annually determines employer contributions to the City system for the current and following years. The actuarially computed value of vested and non-vested benefits on the plan's net assets available for plan benefits for each of the respective plans is not determined separately for the Water Works.

Contributed Capital - Contributions consist of facilities, or cash payments for construction of facilities, received from property owners and governmental agencies who receive benefit from such facilities. In accordance with GASB's Codification, Section G60.116, which allows (but does not require) enterprise funds to close out depreciation expense on contributed assets to "contributed capital" rather than to "retained earnings" the Cincinnati Water Works has adjusted its Contributed Capital and Retained Earnings to reflect this option. During 1998 the Water Works entered into agreements to provide limited water service to the City of Mason, Ohio, Warren County, Ohio and the Western Water Company. The agreements specify that these entities will reimburse the Water Works for the construction of facilities to deliver the water. The value of construction of these facilities less a portion that will be transferred to these entities upon completion of payments is recognized as contributed capital.

Revenue - Unbilled revenues on metered accounts are accrued at year-end. Rates are authorized by City Council based on operating costs and anticipated capital expenditures. A contract between the City and the Hamilton County Board of Commissioners specifies a differential between the rates for City and for Hamilton County consumers, declining from 55% to 25% over the life of the contract ending December 31, 2017. Rates applicable to residents of other counties and some municipalities in Hamilton County are negotiated separately.



Note on Change to 2001 Financial Statements:

After publication of the 2001 Cincinnati Water Works Annual Report, a change was made to the Financial Statements. This change was a result of the auditors bringing to the City's attention that Governmental Accounting Standards Board (GASB) 33 requires that "governments recognize capital contributions to proprietary funds as revenues, not contributed capital."

The effect on the 2001 Financial Statements is:

*a decrease in the amount reported as Contributed Capital and an increase in Retained Earnings of \$8.7M on the Balance Sheet, page 21, and

*two new lines will be added to the Statement of Revenues, Expenses and Changes in Retained Earnings, page 22. Under the Non-Operating Revenue (Expense) section, Capital Contribution in the amount of \$8.5M and Transfers In in the amount of \$.2M will be added.

These changes will be incorporated in the 2001 columns of the 2002 Financial Reports when published in 2003.

Long Term Debt - This consists of General Obligation Bonds which are issued for the purpose of various Water Works improvements. The bonds are self-supporting and serviced by water user charges; however, should the user charges be insufficient to cover debt service, the principal and interest are to be paid from the proceeds of the levy of ad valorem taxes on all property in the City without limitation as to the rate or the amount. The Cincinnati Water Works for the first time issued Revenue Bonds during 2001. The Cincinnati Water Works expects to finance future capital requirements utilizing revenue bonds. The annual requirements to amortize all debt outstanding as of December 31, 2001 is as follows (000's omitted):

Year Ending December 31,		Total	Principal	Interest
Current	2002	\$ 25,886	\$ 17,170	\$ 8,716
Long Term	2003	25,231	17,405	7,826
	2004	21,834	14,905	6,929
	2005	19,549	13,355	6,194
	2006	17,359	11,805	5,554
	2007-2014	139,686	100,225	39,461
Total Long Term		\$223,659	\$157,695	\$65,964
		<u>\$249,545</u>	<u>\$174,865</u>	<u>\$74,680</u>

General Obligation Bonds	Original Principal Issue	Interest Rate (Percent)	Maturity Date	2001 Principal Outstanding	2000 Principal Outstanding
G-1105	\$ 2,500	5.375	2003	\$ 200	\$ 300
G-1137	8,000	7.0	2003	1,080	1,620
G-1138	20,000	7.0	2003	2,800	4,200
G-1140	15,000	6.75	2004	3,000	4,000
G-1146	12,000	6.7	2005	3,200	4,000
G-1147	10,000	6.75	2005	3,500	4,150
G-1162	5,000	5.375	2007	2,100	2,450
G-1170	6,000	4.5	2003	1,200	1,800
G-1176	8,000	4.6	2004	2,400	3,200
G-1185	9,000	5.15	2005	3,600	4,500
G-1192	11,800	4.1	2006	5,900	7,080
G-1197	15,600	4.75	2007	9,300	10,800
G-1203	25,600	4.375	2008	18,100	20,600
G-1210	29,800	4.2	2014	25,800	27,800
S-2001	92,685	4.912	2021	92,685	0
	<u>\$270,985</u>			<u>\$174,865</u>	<u>\$96,500</u>
Less Current Maturity				<u>17,170</u>	<u>14,320</u>
Long Term Debt				<u><u>\$157,695</u></u>	<u><u>\$82,180</u></u>

Other City Agency Transactions

Metropolitan Sewer District and Storm Water Management - The Cincinnati Water Works provides billing and collection services of customers' accounts for the Metropolitan Sewer District and the Storm Water Management Utility. The charges for these services are recognized as revenue and included in the Statement of Revenue, Expense and Changes in Retained Earnings. During 2001 and 2000 the fees for these services were, \$4,364,000 and \$4,039,000 respectively.

Free Water - The Cincinnati Water Works provides free water service to the City of Cincinnati for municipal purposes. During 2001 and 2000 the values of these services were \$976,945 and \$872,000 respectively.

Other City Agency Transactions - The City provides various services to the Cincinnati Water Works for which a fee is charged. These services include personnel, purchasing, legal service, etc. During 2001 and 2000 these fees were \$2,129,000 and \$1,822,000 respectively. Also, the City's Municipal Garage provides gasoline and maintenance service for Water Works vehicles. During 2001 and 2000 these fees were \$782,000 and \$835,000 respectively. In addition, the City's Regional Computer Center provides a variety of services for the Water Works. The primary service provided to the Water Works by the Regional Computer Center is billing and collection system support. During 2001 and 2000 the fees for these services were \$1,385,000 and \$2,072,000 respectively.

Other Issues

During 1993, the Water Works entered into an agreement with the Hamilton County Board of Commissioners to extend water service to previously unserved, unincorporated areas of western Hamilton County. This agreement specifies that a portion of those water collections received from current customers in unincorporated areas of Hamilton County be segregated for the purpose of financing construction of the utility necessary to serve the additional customers. This amount is reflected as Due to Other Governments in the financial statements.

Activity Fund

	January 1, 2001	Additions	Deductions	December 21, 2001
Assets:				
Equity in City Treasury Cash	<u>\$3,466</u>	<u>\$2,050</u>	<u>\$4,970</u>	<u>\$546</u>
Liabilities:				
Accounts Payable	\$ 0	\$4,970	\$4,970	\$ 0
Fund Balance	<u>3,466</u>	<u>2,050</u>	<u>4,970</u>	<u>546</u>
Total Liabilities	<u>\$3,466</u>	<u>\$7,020</u>	<u>\$9,940</u>	<u>\$546</u>





Tunneling under the Ohio River, 1896-1899

In the late 1800's, Cincinnati Water Works constructed its state-of-the-art treatment plant on the Ohio River. The design called for a tunnel under the river leading to an intake pier, and is still in use. Today, GCWW is using new technology borrowed from the oil industry to burrow deep below the river bed in order to serve communities in Northern Kentucky. ("Supplying Our Neighbors"- page 8 & 9)

Greater Cincinnati Water Works

A service of the City of Cincinnati

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Cincinnati, Ohio 45232-9984
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www.rcc.org/cww